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CHRISTOPHER P MAIORANA, PC
LSI Corporation
24840 HARPER
SUITE 100
ST CLAIR SHORES, MI 48080

EXAMINER	
HALLENBECK-HUBER, JEREMIAH CHARLES	

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2621	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/606,731	SOROUSHIAN, KOUROSH	
	Examiner	Art Unit	
	JEREMAIAH C. HUBER	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 December 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,9-16 and 19-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,9-16 and 19-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 June 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-6, 9-16 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gryskiewicz et al (6392712, hereafter Gry), Boyce et al (5592299) and Kim in view of the applicant's admitted prior art (hereafter AAPA).

In regard to claim 1 Gry discloses a method and apparatus for processing a bitstream including:

receiving a first bitstream comprised of frames (Gry Fig. 1 102, 104, 120 and col. 1 lines 21-22), generating first and second field pictures, representing the data in the frame pictures, in response to the input bitstream and (Gry col. 3 lines 18-38), and generating a second bitsream including the first and second field pictures (Gry Fig. 2 note to transmitter 106 and col. 3 lines 38-44); and

first and second field buffers (Gry fig. 1 note 125a-b).

It is noted that Gry does not disclose details of alternating macroblock rows. However, Boyce discloses a method and apparatus for processing a bitstream (Boyce Figs. 1E, 2 and col. 1 line 46 col. 2 line 50) including:

receiving a first bitstream comprised of encoded frame pictures, at an input of a pre-decoder, including intra coded frames, with alternating macroblock rows, with each row containing a plurality of vertical lines from a single respective field (Boyce Figs. 1E and 2 and col. 2 lines 41-50 and col. 5 lines 37-49 note field DCT coded macroblock in Fig. 1E note each block 22-25 comprises a plurality of vertical lines, e.g. 8, 8 pixel vertical lines, from a single field, also note MPEG digital video inherently includes intra coded frames, and frame headers, further note the process and apparatus of Boyce operate on an MPEG encoded bitstream, thus the invention of Boyce is a 'pre-decoder');

generating, in the pre-decoder, first and second field pictures in response to the bitstream (Boyce Figs. 2 and 3 and col. 7 lines 5-15, note first and second fields are generated in response to received bitstream), wherein the first field picture comprises macroblock rows containing the data for the plurality of vertical lines from a first field of the frame picture wherein the encoded vertical data of altering macroblock rows is a copy of the encoded data for the plurality of vertical lines contained in a corresponding macroblock row (Boyce Fig. 3 and col. 7 line 51 to col. 8 line 35 note field picture is composed of alternating block rows of the frame picture, also note col. 8 lines 30-35 each block, i.e. a and b, may be placed into a field macroblock with all DC and AC coefficients, thus the encoded vertical lines corresponding to a single field are copied).

generating a second encoded bitstream, using the pre-decoder, including the first and second field pictures such that the second bitstream is decodable as interlaced field pictures using an MPEG-2 compliant decoder (Boyce col. 6 lines 61-63 note output is MPEG compliant pairs of field pictures further note that MPEG is a compressed

stream format). Boyce also discloses the ability to generate either upper or lower (odd or even) fields (Boyce Fig. 3A&B) and generating picture and slice headers to maintain MPEG compliance (Boyce col. 11 line 56 to col. 12 line 7 note MPEG-2 compliance requires an indication of top or bottom field in a field header).

Boyce further discloses that generated bitstream is used for playback, or display (Boyce col. 5 lines 55-60). Thus, Boyce inherently discloses presenting the second encoded bitstream to input of a standard MPEG-2 compliant decoder, as the encoded video conforms with MPEG-2 standards and must be decoded by an MPEG-2 compliant decoder in order to be viewable for display.

It is further noted that neither Gry nor Boyce discloses copying and modifying header information. However Kim discloses a an MPEG-2 format conversion method in which various headers are modified and copied into new bitstreams (Kim Fig. 1 and col. 5 line 44 to col. 6 line 63).

Therefore, it was well known in the art at the time of the invention to generate first and second fields containing video data from frames as disclosed by Gry. It was also well known in the art at the time of the invention to generate single encoded fields in response to encoded frames where each field is comprised of macroblock rows containing data of the original frame, and output a second bitstream comprised of encoded field pictures that is decodable using an MPEG-2 complaint decoder as disclosed by Boyce. It was further well known to copy and modify various headers into new bitstreams during format conversion as disclosed by Kim. The examiner does not believe that one of ordinary skill in the art would have had any difficulty in combining the

generation of two fields as taught by Gry with the compressed frame to field conversion method of Boyce and copying and modification of headers as taught by Kim. Therefore the applicant's invention merely represents a combination of prior art elements according to known methods to achieve predicable results. In such a combination all inventions would perform as they did separately. Namely, the method Boyce would continue to operate to generate encoded fields from encoded frames, the method of Gry would continue to generate two data fields in response to input frames, and the method of Kim would continue to copy and modify header data during format conversion. One of ordinary skill in the art would further have found such results to be predictable because generating two data fields in response to frames was well known as taught by Gry. Boyce teaches a method of generating a single data field from a frame. Kim teaches header copying and modification during format conversion. Therefore the result of generating two fields from a frame using the method of Boyce, and deriving the headers of those fields via copying and modification as taught by Kim would have been predictable.

Boyce further discloses the ability to operate on bitstreams in the MPEG-2 format, and to generate an output encoded as intra-only pictures (Boyce col. 5 lines 38-49 and col. 6 lines 27-37 note col. 6 lines 33-37 first output fields are selected to be I fields and the second fields may also be I fields). It is noted that neither Gry, Boyce nor Kim explicitly disclose receiving an intra-only bitstream. However, the AAPA discloses that an intra-only in bitstream structure was commonly known in the art at the time of the invention (Spec. p. 3 lines 9-20 note bitstream can be formed solely of intra

pictures). It is therefore considered obvious that one of ordinary skill in the art would recognize the advantage of applying an intra-only input bitstream to the invention of Gry, Boyce and Kim in order eliminate processing time required to converting fields into intra coded pictures as suggested by Boyce (Boyce col. 6 lines 30-32 note fields are made to be intra coded). One would further expect the invention of Gry, Boyce and Kim to operate on such a bitstream structure because it is part of the MPEG-2 standard.

Alternatively if one were to assume in arguendo, that Boyce did not disclose copying the vertical lines of macroblock rows as claimed, the claim would still be obvious in view of the AAPA. Boyce generally discloses an image structure where macroblocks may be either a frame DCT or field DCT type, where a frame DCT type comprises interlaced blocks, whereas a field DCT type comprises 8x8 blocks corresponding to individual fields. The AAPA discloses a further frame structure in the MPEG-2 standard wherein larger 16x16 macroblocks may correspond to individual fields as opposed to the blocks of Boyce. It would therefore be considered obvious that one of ordinary skill in the art at the time of the invention would apply the field generation method of Gry in view of Boyce to the 16x16 field macroblock structure disclosed by the AAPA in order to gain compliance with a greater variety of image structures. Incorporation of the AAPA structure would further reduce the number of frame to field calculations necessary because by operating on larger image blocks the number of operations assigning a block to a particular field would be reduced by a factor of 4.

In regard to claims 2-3 refer to the statements made in the rejection of claim 1 above. Gry further discloses first and second field buffers (Gry fig. 1 note 125a-b). Boyce further discloses selecting alternate macroblock rows to generate a field (Boyce Fig. 3 and col. 8 lines 1-35). Boyce further discloses generating picture and slice headers to maintain MPEG compliance (Boyce col. 11 line 56 to col. 12 line 7 note MPEG compliance requires an indication of top or bottom field in a field header). It is further noted that neither Gry nor Boyce discloses copying and modifying header information. However Kim discloses a an MPEG format conversion method in which various headers are modified and copied into new bitstreams (Kim Fig. 1 and col. 5 line 44 to col. 6 line 63). It is therefore considered obvious to include header copying and modification as taught by Kim in the invention of Gry and Boyce in order to speed processing.

In regard to claim 4 refer to the statements made in the rejection of claims 2-3 above. Boyce further discloses adjusting slice numbers (Boyce col. 11 lines 60 to 67 note correct slice_vertical_position values).

In regard to claim 5-6 refer to the statements made in the rejection of claim 1 above. Gry further discloses writing first and second fields consecutively into a second bitstream (Gry Fig. 2 note odd and even fields).

In regard to claim 9 refer to the statements made in the rejection of claim 7 above. Gry further discloses presenting field lines on a display in response to an input bitstream (Gry col. 9 lines 11-17), and further that the display can be a television (Gry col. 4 lines 1-3). Kim further discloses that decoding encoded bitstreams for display was

well known in the art at the time of the invention (Kim generally col. 1 line 32 to col. 2 line 62).

In regard to claims 10, 11, 19 and 20 refer to the statements made in the rejection of claims 1-9 above. In particular regard to claim 11 Gry and Boyce both disclose a first circuit (Gry Fig. 1 note system memory 104; Boyce Fig. 2 note data reduction circuit 100). As noted in the rejection of claim 1 above Boyce further inherently discloses an MPEG-2 decoder. It is noted that neither Gry, Boyce, Kim nor the AAPA explicitly disclose implementing such a decoder in a circuit. However, the examiner takes official notice that it was common and notoriously well known in the art to implement an MPEG-2 decoder in a circuit. It is therefore considered obvious that one of ordinary skill in the art would recognize the advantage of realizing the inherent decoder of Boyce in a circuit in order to gain the advantage of a machine implemented decoder.

In claims 12-16 refer to the statements made in the rejection of claims 1-9 above. In particular regard to claim 12, Gry further discloses one or more memory devices (Gry Fig. 1 note buffers 126a and 126b), Boyce further discloses an output circuit (Boyce Fig. 2 note frame/field conversion circuit 116), Kim further discloses a transform circuit (Kim Fig. 1).

In regard to claims 21-22 refer to the statements made in the rejection of claim 16 above. Kim further discloses writing a sequence header from a first bit stream into a second bitstream, and further discloses modifying portions of the sequence header prior to writing (Kim fig. 1 and col. 5 line 44 to col. 6 line 63 particularly col. 6 lines 12-29).

Response to Arguments

Applicant's arguments, see Remarks, filed 12/01/2009, with respect to the rejection(s) of claim(s) 1, 11 and 12-16 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, new grounds of rejection are made based upon the same prior art.

Accordingly the applicant's arguments made in regard to claims 1 and 11 with respect to intra-only bitstreams, arguments related to inherency of decoding, and the arguments made in regard to certain elements of claims 12-16 are moot in view of the new grounds of rejection.

In response to the applicants arguments made individually in regard to Gry, the applicant asserts that the mixing of progressive video frames in Gry, and the data reduction in Boyce result in data that is not a copy of the encoded bitstream as required by the claims. The examiner must disagree. Initially, the applicant is arguing against the references individually. one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The instant rejection is based on a plurality of known prior art techniques used in combination. Gry is relied upon to teach the known prior art technique of separating a frame into two fields, by copying frame data into both fields, using two field buffers. Further, Gry discloses a second bitstream composed of the two

fields (Gry Fig. 1 note bitstream from 104 to 106 comprises the separated fields). The above technique of Gry does not reduce the total amount of data contained in the bitstream. The later, mixing, processing of Gry is are not relied upon for the combination and further the proposed combination could be implemented in the frame/field conversion of Gry before further operations take place. Boyce discloses a method of generating encoded fields, from encoded frames where one of the encoded fields represents copied vertical lines contained in macroblock rows of the corresponding frame, and the other field is left blank in order to reduce the amount of data in the encoded fields. However, combining teachings of Gry with those of Boyce, one finds a teaching in Gry to generate two fields from a frame without reducing the total amount of data. Applying this teaching to Boyce one would generate two full fields containing copied vertical lines of macroblock rows from the frame, instead of one full field and a blank field. Thus the combination of Gry in view of Boyce meets the asserted limitation of claims 1 and 11.

The applicant further asserts that the combination of the prior art must disclose a teaching, suggestion or motivation to combine the prior art techniques, the rejection is based on the applicant's invention being a combination of familiar elements according to known methods which yields no more than predictable results according to MPEP 2141 (I), discussing *KSR v. Teleflex*. Further, the proposed combination does not render prior art unsatisfactory for its purpose, at the very least the further mixing operations in Gry could continue to operate, if the proposed combination were implemented in the frame/field conversion of Gry.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fujinami and Faroudja disclose separating frames into fields using two frame buffers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEREMAIAH C. HUBER whose telephone number is (571)272-5248. The examiner can normally be reached on Mon-Fri 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571)272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jeremiah C Huber
Examiner
Art Unit 2621

/Jeremiah C Huber/
Examiner, Art Unit 2621

/Mehrdad Dastouri/
Supervisory Patent Examiner, Art Unit 2621